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Local News

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Students take advantage of Lawrence Lab opportunities

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wouldn't consider giving high school students a shot at intern work usually reserved for undergraduates. And the rest is history.

The program has grown from 11 Richmond High students last summer to 25 students from six different high schools this summer, including seven students from Berkeley High. Most participants are students who have demonstrated a strong interest in science and want to get a taste careers in the field.

Through the internships, the students are, as Rollie Otto, head of the lab's Center for Science and Engineering Education said, "realizing what [scientists] do in their jobs, and what they know and how the educational process prepares you for that."

"One of the most important things that can happen in your professional development as a young person who is going to go into science is establishing a mentoring relationship," Otto said.

Paired up with some of the lab's 1,300 scientists and engineers, the students learn first hand the tiny steps one takes when attempting to "unravel the secrets of the universe."

Since its founding in 1931, the Lawrence Berkeley lab has done pretty well in the "unraveling"

business. Its scientists have garnered nine Nobel prizes. In the area of medical research alone the lab is a pioneer in the areas of nuclear medicine, medical imaging and cardiology.

Today the researchers do list includes: Finding better ways to treat breast cancer; creating machines that produce energy with less pollution; decoding the human genome; improving medical imaging equipment; using "extreme ultraviolet light" to create computer chips 100 times more powerful than a Pentium IV; and, last but not least, figuring out "how our universe was created and whether it will one day end."

The students' work runs the gamut from cleaning lasers to actually conducting hands on research. Depending on their job, they could be exposed to cutting edge work in the areas of physics, life sciences, earth sciences, engineering and environmental science.

"It's really amazing that so much work is being done up here," said Farm Tsoun Saechao, a recent Richmond High graduate. "Everything is made from scratch more or less. It's like making science fiction a reality."

Saechao, who actually wants to be an English major in college, has spent her summer internship interviewing 10 different

Lawrence lab scientists and writing descriptions of what they do.

For Kelsey Israel-Trummel, who will be a Berkeley High junior in the fall, working at the lab has helped her appreciate how much work, dedication and knowledge it takes to bring a scientific experiment to a successful conclusion. Whereas high school science classes tend to be pretty narrow and focused in scope, projects at the lab draw on a huge body of scientific knowledge, Israel-Trummel said.

"In school you just learn about chemistry, biology and all the different subjects separately," she said. "But here I'm noticing how all the different stuff fits together."

Israel-Trummel has been involved in Lawrence lab scientist Robert Cheng's efforts to design a natural gas burner with lower levels of harmful emissions. Cheng's discoveries could have a variety of pollution-cutting applications for home hot water heaters on up to electricity-generating plants.

The summer internships aren't all hard work, however. Each Wednesday students get to hear guest lectures address the latest advances in different areas of science. They get to take tours of the lab's 130-acre campus and see ingenious scientific devices that may not exist anywhere else

in the world.

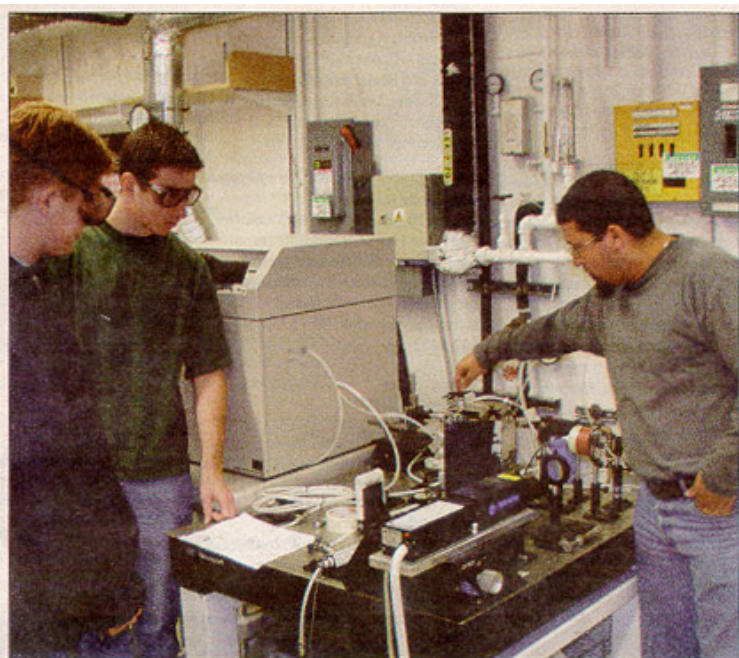
They even get to play with liquid nitrogen, spilling it on a table top and watching it evaporate before it has time to run off the edge, or mixing it with milk and cream to create a kind of instant ice cream — which they then devour with copious quantities of chocolate fudge.

"It's like really hands on," Saechao said of the experience. "When you think of something you do it."

At the end of their internships, each student will be expected to give a Power Point presentation on what they've learned to parents, friends, school district superintendents, school board members, high school faculty

and Lawrence laboratory mentors.

Julie Benke is a Berkeley High Biology teacher helping coordinate the internship program this summer. She said she has seen some students scientific curiosity jump through the roof in the last several weeks as they grapple with some of the most advanced scientific experiments underway anywhere in the world. Some students are kicking themselves for not taking better notes in their high school science classes, she said. Which is a phenomenon she has found both amusing and gratifying. I have a much more captive audience," Benke said. "Because now they really need to know."



BEN LUMPS/DAILY PLANET

Jonah Van Bourg, Nathan Lee Blumenkrantz and Lawrence lab scientist Jhanis Gonzalez check out a machine that uses a laser to determine the elemental composition of different objects.